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The 1990 Iowa Corn Yield Test Report, District 7

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Abstract

Results of the Iowa Com Yield Test are published to aid Iowa farmers in selecting com hybrids. This is the seventy-first consecutive year for the test. The presentation of data for the hybrids tested does not imply approval or endorsement by the authors or by the agencies sponsoring or conducting the test. Entries in tables 1 and 2 are designated by brand name and variety.

Disciplines

Agriculture

IOWA STATE UNIVERSITY

AGRONOMY
• Crops
• Soils
• Climate

THE 1990 IOWA CORN YIELD TEST REPORT

District 7

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1990 Procedure

Producers of corn seed and Iowa State University were eligible to enter varieties in the Iowa Corn Yield Test. Each producer was allowed a maximum of six paid entries per district. All entries had to be available in a quantity of at least 10 bushels of seed.

One hundred fifty-six entries were evaluated in this district. Fifteen of the entries were determined to be widely grown and were entered by Iowa State University. In June, of even numbered years, approximately 21,000 survey cards are mailed in the state. Recipients of these cards are determined by a random drawing of names from landowners listed in the county plat books. Based on the survey results, the 15 hybrids grown on the most acres in the district are classified as widely grown for that district. The widely grown hybrids (*) in this report were determined by the 1988 survey. Iowa State University entered a maximum of three widely grown hybrids of any given brand. These entries were given priority over the remaining 141 entries made by seed producers.

Each entry was replicated four times in four-row plots at a planting rate of 25,500 kernels per acre at each location. All locations were machine-planted. The center two rows of each plot were harvested with a corn combine. No gleanings or dropped ears were included in yield data. A moisture determination was made from each plot, and yields were corrected to 15.5 percent moisture for shelled corn.

Starting with the 1988 report, data for protein, oil, and starch percentages are included in the Iowa Corn Yield Test Report. Protein, oil, and starch were measured on a near-infrared reflectance analyzer that was calibrated against accepted chemical methods. Dr. Charles R. Hurburgh, Jr. of the Department of Agricultural Engineering at Iowa State University is responsible for analyzing the samples. Samples for nutrient analysis were collected from one field in each district. Data presented are averages of the four replicated plots in that field. To be consistant with the yield data, the protein, oil, and starch data were corrected to 15.5 percent moisture.

How Information Is Presented

The agronomic data presented are averages of three locations in 1988, 1989, and 1990. Yield in bushels per acre and percentage of moisture, root lodging, stalk lodging, dropped ears, stand, protein, oil, and starch are shown for all entries tested in 1990 and for those tested in 1988 and 1989 that were in the 1990 test.

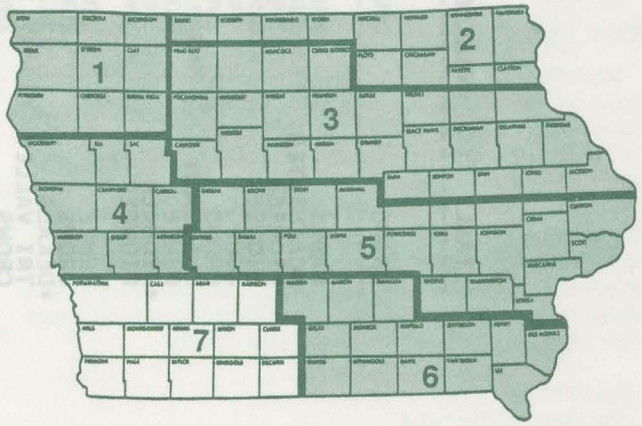
Interpretation of Results

Yield differences due to variation in soil, fertility, moisture availability, insect infestation, and diseases, plus any variation due to planting and harvesting techniques, are identified through statistical analysis. The LSD values for yield shown in tables 1 and 2 represent, in bushels per acre, the amounts of yield variation that could be due to variations in the factors just mentioned. In comparing varieties, yield differences greater than the LSD value can be attributed to genetic differences in the yield potential of these varieties; yield differences less than the LSD value are not statistically different and could have been due to other factors.

Grain moistures shown in tables 1 and 2 are indications of maturity and natural drying rate. Maturity of varieties entered generally ranged from early to full season. Yield comparisons should be made among varieties of similar maturity.

It is important to select varieties having stable performance over a range of environmental conditions. High yields for two or more consecutive years indicate stable performance. Supplemental yield and agronomic information about specific varieties may be obtained from seed corn dealers and neighbors who have grown these varieties.

Protein, oil, and starch percentages (tables 1 and 2) are quality attributes important to many of the different end-users of corn. While these factors are not currently measured at corn markets, there is great interest in expanding the U.S. grain grading system to be more end-user oriented. These data are being reported because compositional analysis provides factors of economic importance to



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Agriculture and Home Economics Experiment Station,
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EXTENSION
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Table A. Field Data

	Hays Farm Monona silt loam			Fuller Farm Winterset silty clay loam			Sawyers Farm* Macksburg silty clay loam		
Fertilizer applied, lb.	N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O
Preplant	140	—	—	150	—	—	145	45	60
TOTAL	140	—	—	150	—	—	145	45	60
1989 crop	Soybeans			Soybeans			Soybeans		
Row width	30 inches			30 inches			30 inches		
Planting date	April 26			May 1 & 2			May 1		
Harvest date	Sept. 26 & 27			Oct. 9 & 10			Sept. 27 & 28		
Average yield	131 bu/a			147 bu/a			148 bu/a		

*Field sampled for protein, oil, and starch percentage data.

a wide range of corn end-users. Livestock feeders may want to utilize the compositional information in selecting hybrids to plant for feed use. For feed, protein will be of primary interest; for processing uses, oil and starch content are of importance. The protein percentage data reported are measures of crude protein and may not give an accurate indication of feed value if feed rations are balanced on individual amino acids rather than crude protein content.

1990 Field Data

The District 7 test was conducted on farms operated by William Hays near Malvern in Mills County, Marvin Fuller near Corning in Adams County, and Keith Sawyers near Winterset in Madison County. The field data are presented in table A.

At planting time, subsoil moisture for the district ranged from somewhat low on the western edge to adequate in the east. Rainfall for the district was below normal in April and well below normal in September. For the months of May, June, July, and August, rainfall varied across the district: the Mills County location received above normal rainfall in April and May, well above normal in June, and near normal rainfall in August; the Adams County location received above normal, near normal, well above normal, and well below normal rainfall for the respective months; while the Madison County location received near normal in May, above normal in June and July, and well below normal in August. Temperatures for the district were below normal in April and July, well below normal in May, above normal in June, near normal in August, and well above normal in September. The average district yield was 2 bushels per acre below the mean of the five preceding years' averages. Average location yields are listed in table A.

Other Reports

Separate reports for variety performance are available for each district shown in figure 1. These publications are available at your county extension office or from Publications Distribution, Printing and Publications Building, Iowa State University, Ames, Iowa 50011. Also, an IBM compatible diskette containing these data along with a hybrid selection program is available from Extension Software Services, 108 Atanasoff Hall, Iowa State University, Ames, IA 50011. The cost of this diskette is $20. All seven districts can be purchased for $125. When ordering, along with the payment, indicate diskette size, 5¼ or 3½, and district(s) wanted. Order forms are available from county extension offices.

The 1990 Iowa Corn Yield Test Report:
Pm-660-1-90 District 1
Pm-660-2-90 District 2
Pm-660-3-90 District 3
Pm-660-4-90 District 4
Pm-660-5-90 District 5
Pm-660-6-90 District 6
Pm-660-7-90 District 7

File: Agronomy 1

District 7
Designations Identifying Brands in the Yield Test

AGRIGENE	Agrigene Seed Research, Des Moines, IA 50322
AGRIPRO	AgriPro, Ames, IA 50010
AMES BEST	Ames Best Hybrids, Ames, IA 50010
ASGROW	Asgrow Seed Company, Kalamazoo, MI 49001
ATLAS/S BRAND	Atlas/S Brand Seed Co., Harlan, IA 51537
*CARGILL	Cargill Seeds, Minneapolis, MN 55440
CENEX/ LAND O' LAKE	Cenex/Land O' Lakes, Fort Dodge, IA 50501
CFS	Custom Farm Seed, Momence, IL 60954
CHEESMAN	Cheesman Seed Co., Lincoln, IL 62656
COOP	Cooperative Seeds Inc., Alta, IA 51002
CRESTLAND	Farmers Coop Co., Creston, IA 50801
CROWS	Crows Hybrid Corn Co., Milford, IL 60953
*DEKALB	Dekalb Plant Genetics, DeKalb, IL 60115
DYNA GROW	United Agriproducts, Inc., Greeley, CO 80631
FONTANELLE	Fontanelle Hybrids, Nickerson, NE 68044
FS	Growmark, Inc., Bloomington, IL 61702
FUNK'S G BRAND	Ciba-Geigy Seed Division, Greensboro, NC 27419-8300
*GARST	Garst Seed Co., Slater, IA 50244
*GOLDEN HARVEST	ROB-SEE-CO Golden Harvest, Waterloo, NE 68069
GRUHN HYBRID	Gruhn Hybrid Corn Co., Inc., Manilla, IA 51454
HOEGEMEYER	Hoegemeyer Hybrids, Inc., Hooper, NE 68031
HORIZON	Horizon Seeds, Inc., Lincoln, NE 68501
HYPERFORMER	HyPerformer, Memphis TN 38137
JACQUES	Jacques Seed Company, Prescott, WI 54021
KRUGER	Kruger Seed Company, Dike, IA 50624
LEWIS	Lewis Hybrids, Inc., Ursa, IL 62376
*LYNKS	Lynks Seeds, Marshalltown, IA 50158
MARK	Mark Seed Co., Perry, IA 50220
MCALLISTER	McAllister Seed Co., Inc., Mt. Pleasant, IA 52641
MCCURDY	McCurdy Seed Co., Fremont, IA 52561
NC+	NC+ Hybrids, Lincoln, NE 68504
*NORTHRUP KING	New Northrup King Co., Ames, IA 50010
OTTILIE	Ottilie R. O. Seed, Marshalltown, IA 50158
PFISTER	Pfister Hybrid Corn Co., El Paso, IL 61738
*PIONEER	Pioneer Hi-Bred International, Inc., Ankeny, IA 50021
RENZE	Renze Hybrids, Inc., Carroll, IA 51401
SOI	Sand Seed Service, Inc., Marcus, IA 51035
*SUPER CROST	Edward J. Funk & Sons, Inc., Kentland, IN 47951
SUPERIOR	Superior Hybrids Co., North Bend, NE 68649
TERRA	Terra International, Inc., Lima, OH 45804
TRI VALLEY	Tri Valley Seed, Council Bluffs, IA 51501
WILSON	Wilson Hybrids, Inc., Harlan, IA 51537

*Companies with one or more widely grown entries made by Iowa State University.

Cooperative Extension Service, Iowa State University of Science and Technology and the United States Department of Agriculture cooperating. Robert M. Anderson, Jr., director, Ames, Iowa. Distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914.

TABLE 1. AVERAGE PERFORMANCE OF VARIETIES TESTED IN DISTRICT 7. 25,500 PLANTING RATE. LSD FOR 1990 YIELD IN BUSHELS IS 9. 1990 PROTEIN PCT LSD = 0.3. 1990 OIL PCT LSD = 0.2. 1990 STARCH PCT LSD = 0.7.

BRAND	VARIETY	CROSS	YIELD BU/A			MOISTURE PCT			ROOT LDG PCT			STALK LDG PCT			DROP EAR PCT			STAND PCT			PROTEIN PCT			OIL PCT			STARCH PCT			VARIETY	BRAND
			1988	1989	1990	1990	1989	1988	1990	1989	1988	1990	1989	1988	1990	1989	1988	1990	1989	1988	1990	1989	1988	1990	1989	1988	1990	1989	1988		
GARST	8599	SX		121	120	14.7	16.5		0	2		7	3		1	0		88	81		7.9	8.1		3.5	3.8		60.1	60.4		8599	GARST
MCALLISTER	9105	SX			123	15.1			0			6			0			90			7.6			3.8			60.3			9105	MCALLISTER
PIONEER	3362	SX		149	143	15.9	18.6		0	3		3	4		0	1		87	87		7.1	7.1		3.4	3.7		60.2	60.8		3362	PIONEER
PIONEER	3379	SX	116	149	144	16.0	17.9	18.0	0	5	0	2	5	1	0	0	0	89	88	80	7.0	7.5	7.3	3.4	3.4	3.5	60.2	60.3	60.6	3379	PIONEER
COOP	2233	SX			134	16.1			0			6			2			88			7.1			3.6			60.7			2233	COOP
CROWS	449	SX			139	16.2			0			2			0			91			7.5			3.5			59.9			449	CROWS
CHEESMAN	520	SX			142	16.3			0			1			0			85			7.2			3.4			60.4			520	CHEESMAN
RENZE	6341	SX		144	143	16.4	19.1		0	7		2	5		0	0		91	90		7.3	7.8		3.6	3.8		60.5	60.5		6341	RENZE
*PIONEER	3475	SX	82	113	135	16.5	17.1	15.5	0	10	0	4	9	0	0	1	0	84	83	73	7.5	7.7	7.9	3.5	3.8	3.6	60.1	61.0	60.5	3475	*PIONEER
PIONEER	3417	SX			152	16.6			0			5			0			93			7.0			3.6			60.5			3417	PIONEER
RENZE	6338	SX		130	149	16.6	17.4		0	8		2	10		0	0		88	88		7.1	7.3		3.5	3.7		60.4	60.7		6338	RENZE
CROWS	488	SX	104	127	144	16.7	18.5	15.5	0	15	0	5	7	3	0	1	0	87	80	83	7.0	7.2	7.3	3.7	3.7	3.6	61.1	60.6	60.7	488	CROWS
*DEKALB	T1100	SX	100	131	131	16.7	18.4	16.5	0	4	1	4	13	3	0	1	0	87	82	83	7.1	7.8	7.6	3.6	3.8	3.4	60.9	60.6	60.3	T1100	*DEKALB
TRI VALLEY	111	SX			146	16.7			0			3			0			89			7.0			3.6			60.8			111	TRI VALLEY
CROWS	482	SX			146	16.8			0			4			0			88			7.1			3.7			60.7			482	CROWS
RENZE	6358	SX	101	136	138	16.9	20.2	17.1	0	7	0	4	8	2	0	0	0	86	86	86	7.3	7.5	7.6	3.6	3.9	3.5	60.4	61.1	60.7	6358	RENZE
TERRA	TR1110	SX	90	114	132	16.9	18.5	17.1	0	2	0	1	5	1	0	0	0	81	76	76	7.3	8.0	7.6	3.5	3.4	3.5	60.5	59.6	60.6	TR1110	TERRA
FS	6595	SX			138	17.1			0			3			0			83			7.1			3.5			60.4			6595	FS
KRUGER	9012	SX			127	17.1			0			4			0			82			7.7			3.9			60.8			9012	KRUGER
TERRA	TR1090	SX			145	17.1			0			5			0			87			7.1			3.6			60.6			TR1090	TERRA
GOLDEN HARVEST	H2525	SX	92	136	144	17.2	18.0	16.3	0	8	0	3	7	2	0	1	0	87	89	77	7.1	7.2	7.5	3.4	3.8	3.4	60.0	61.0	60.4	H2525	GOLDEN HARVEST
HYPERFORMER	HS9641	SX			135	17.2			0			1			1			75			7.3			3.7			60.5			HS9641	HYPERFORMER
SUPERIOR	SP5448	SX			145	17.2			0			4			0			88			7.1			3.6			60.6			SP5448	SUPERIOR
GARST	8505	SX			142	17.3			0			2			0			88			7.0			3.6			60.7			8505	GARST
LEWIS	3327	SX			136	17.3			0			4			0			86			7.3			3.6			60.5			3327	LEWIS
PFISTER	2375	SX			142	17.3			0			4			0			92			7.0			3.5			60.3			2375	PFISTER
NORTHRUP KING	N6330	SX			139	17.4			0			4			1			92			7.0			3.6			60.7			N6330	NORTHRUP KING
GOLDEN HARVEST	H2540	SX	104	130	136	17.5	19.4	17.5	0	10	0	5	7	1	0	0	0	89	86	88	7.5	8.0	8.3	3.7	3.9	3.6	60.2	60.6	60.3	H2540	GOLDEN HARVEST
NORTHRUP KING	N6560	SX			141	17.5			0			5			0			93			7.4			3.6			60.3			N6560	NORTHRUP KING
COOP	2244	SX		129	133	17.6	19.4		0	6		5	1		1	0		89	80		7.4	7.7		3.7	4.0		60.7	61.2		2244	COOP
MCALLISTER	8611	SX	101	128	130	17.6	19.9	17.6	0	4	0	8	1	3	0	0	0	88	83	81	7.5	8.0	8.2	3.6	3.8	3.6	60.2	60.8	60.4	8611	MCALLISTER
*PIONEER	3377	SX	102	128	149	17.6	19.1	15.6	0	13	1	6	11	2	0	1	0	86	73	79	6.7	7.2	7.4	3.5	3.8	3.4	60.5	61.2	60.5	3377	*PIONEER
AMES BEST	SX16	SX	102	136	139	17.7	19.4	17.5	0	9	0	5	4	2	0	0	0	87	85	85	7.5	8.0	8.2	3.5	3.9	3.6	60.0	60.6	60.2	SX16	AMES BEST
CHEESMAN	545	SX			129	17.8			0			6			1			83			8.1			3.4			59.8			545	CHEESMAN
FS	6774	SX	97	132	131	17.8	19.6	17.5	0	6	0	6	3	3	0	0	0	87	88	84	7.3	7.9	8.1	3.7	3.9	3.8	60.4	61.0	61.0	6774	FS
RENZE	6352	SX			129	17.8			0			5			0			92			7.4			3.6			60.3			6352	RENZE
TERRA	TR1125	SX	96	125	137	17.8	18.9	17.4	0	5	0	4	4	1	0	0	0	90	83	86	7.5	7.9	8.1	3.7	4.2	3.7	60.5	61.5	60.8	TR1125	TERRA
ASGROW	RX727	SX			136	17.9			0			3			0			89			7.0			3.6			60.3			RX727	ASGROW
ATLAS/S BRAND	SS60C	SX			141	17.9			0			2			0			89			7.5			3.6			60.1			SS60C	ATLAS/S BRAND
CARGILL	6227	SX			137	17.9			0			5			0			80			7.4			3.5			60.2			6227	CARGILL
CARGILL	8127	SX		145	140	17.9	20.7		0	15		3	6		0	0		93	90		7.5	8.3		3.5	3.5		60.0	59.9		8127	CARGILL
CROWS	498	SX			132	17.9			0			4			0			86			7.3			3.6			60.3			498	CROWS
DEKALB	DK612	SX		131	132	17.9	19.2		0	5		4	3		1	0		88	83		7.3	8.3		3.7	3.6		60.6	60.0		DK612	DEKALB
GARST	8519	SX		138	132	17.9	19.4		0	7		3	3		0	0		91	85		7.6	8.1		3.7	4.2		60.3	61.6		8519	GARST
MCALLISTER	9009	SX		128	140	17.9	18.0		0	5		6	7		1	0		86	84		7.1	7.3		3.5	3.9		60.3	61.2		9009	MCALLISTER
NORTHRUP KING	S7686	SX		135	140	17.9	20.2		0	16		2	6		0	0		94	87		7.4	8.1		3.6	3.8		60.4	60.8		S7686	NORTHRUP KING
TRI VALLEY	114	SX			136	17.9			0			4			0			89			7.2			3.7			60.5			114	TRI VALLEY
CARGILL	6927	SX			128	18.0			0			5			0			91			7.5			3.7			60.5			6927	CARGILL
CROWS	697	SX		137	135	18.0	20.9		0	3		3	4		0	0		88	80		7.5	8.3		3.5	3.6		60.2	60.0		697	CROWS
LYNKS	2757	SX			138	18.0			0			4			0			91			7.3			3.8			60.6			2757	LYNKS
ASGROW	RX746	SX			132	18.1			0			3			0			88			7.5			3.6			60.4			RX746	ASGROW
GRUHN HYBRID	SX117A	SX			135	18.1			0			3			0			87			7.5			3.7			60.4			SX117A	GRUHN HYBRID
HORIZON	7115	SX			136	18.1			0			6			0			89			7.4			3.6			60.3			7115	HORIZON
PIONEER	3180	SX		143	136	18.1	20.5		0	14		6	7		0	0		91	90		7.1	7.5		3.5	3.8		60.6	61.1		3180	PIONEER
FONTANELLE	4280	SX	106	134	130	18.2	19.2	17.9	0	4	0	8	6	2	0	0	0	95	87	85	7.2	7.9	8.1	3.8	4.2	3.8	60.5	61.3	60.8	4280	FONTANELLE
FUNK'S G BRAND	4490	SX			134	18.2			0			4			0			92			7.5			3.7			60.6			4490	FUNK'S G BRAND
WILSON	1640	SX			140	18.2			0			3			0			90			7.5			3.7			60.8			1640	WILSON
FUNK'S G BRAND	4530	SX			151	18.3			0			3			0			94			7.3			3.6			60.4			4530	FUNK'S G BRAND
*GARST	8532	SX	98	137	132	18.3	19.6	17.3	0	3	0	6	3	2	0	0	0	96	85	84	7.4	8.1	8.1	3.7	4.0	3.8	60.6	60.8	61.0	8532	*GARST
MCCURDY	7400	SX	114	136	142	18.3	20.9	19.2	0	12	1	3	8	2	1	1	0	89	84	82	7.5	8.0	8.2	3.5	3.7	3.4	60.2	60.5	59.9	7400	MCCURDY
PIONEER	3189	SX		144	141	18.3	21.0		0	6		2	5		0	0		81	84		7.2	7.5		3.7	3.9		60.6	60.8		3189	PIONEER
HYPERFORMER	HS9663	SX			142	18.4			0			6			1			86			7.6			3.4			59.7			HS9663	HYPERFORMER
AGRIPRO	AP675	SX			148	18.5			0			4			0			91			7.6			3.4			59.8			AP675	AGRIPRO
CARGILL	7877	SX	103	139	158	18.5	20.4	17.9	0	20	0	2	5	5	0	0	0	89	82	86	7.2	7.5	7.9	3.7	3.9	3.7	60.7	60.9	60.9	7877	CARGILL
CENEX/LAND O'LAKE	651	SX			129	18.6			0			4			0			83			7.6			3.7			60.2			651	CENEX/LAND O'LAKE
CROWS	682	SX	112	131	145	18.6	20.2	19.4	0	12	0	4	9	2	0	0	0	84	80	78	7.3	7.9	7.5	3.5	3.6	3.5	60.1	60.1	60.7	682	CROWS
CRESTLAND	8817	SX	106	143	144	18.7	20.5	19.8	0	16	0	6	10	3	1	1	0	72	88	83	7.0	7.7	8.0	3.7	3.9	3.4	60.6	61.0	60.4	8817	CRESTLAND
SOI	9100	SX			139	18.7			0			6			0			88			7.5			3.6			59.8			9100	SOI
CFS	EW06055	SX			132	18.8			0			5			0			82			7.5			3.7			59.9			EW06055	CFS
ASGROW	RX908	SX		127	150	18.9	22.8		0	17		4	5		0	1		91	84		7.4	8.0		3.5	3.5		60.3	60.2		RX908	ASGROW
ATLAS/S BRAND	CB1180	SXB			143	19.2			0			4			1			85			7.4			3.5			60.1			CB1180	ATLAS/S BRAND
CHEESMAN	580	SX			138	19.2			0			5			1			87			7.1			3.6			60.7			580	CHEESMAN
*NORTHRUP KING	S7751	SX	110	140	148	19.2	19.8	18.8	0	13	0	3	7	3	0	1	0	90	83	84	7.3	7.9	7.6	3.6	3.9	3.6	60.3	61.1	60.8	S7751	*NORTHRUP KING
*CARGILL	7993	SX	111	132	143	19.3	20.0	19.2	0	18	0	2	6	1	0	0	0	86	85	89	7.3	7.9	7.4	3.7	3.7	3.6	60.4	60.3	60.8	7993	*CARGILL
DYNA GROW	5550	SX			147	19.3			0			4			0			90			7.5			3.5			60.1			5550	DYNA GROW
HOEGEMEYER	2715	SX			155	19.3			0			2			0			92			7.5			3.3			59.7			2715	HOEGEMEYER
LYNKS	2810	SX		137	141	19.4	19.9		0	11		6	4		0	1		84	89		7.5	8.0		3.5	3.8		60.0	60.5		2810	LYNKS
OTTILIE	2490	SX	105	140	158	19.4	21.9	18.9	0	13	1	6	12	5	0	1	0	91	89	81	7.1	7.6	7.4	3.7	3.9	3.5	60.8	61.0	60.5	2490	OTTILIE
ASGROW	RX788	SX	102	136	142	19.5	19.7	18.7	0	7	0	4	9	2	0	0	0	85	86	80	7.3	7.8	7.8	3.6	3.8	3.7	60.2	60.7	60.8	RX788	ASGROW
CFS	W7877	SX		128	143	19.5	20.0		0	16		4	7		1	1		87	85		7.3	7.7		3.5	3.4		59.8	59.2		W7877	CFS
MCALLISTER	8310	SX	113	129	145	19.5	20.0	18.8	0	12	0	2	7	1	0	1	0	92	81	87	7.3	7.9	7.7	3.7	3.9	3.5	60.7	60.7	60.6	8310	MCALLISTER
AMES BEST	SX19AA	SX	103	132	144	19.6	19.2	19.3	0	19	0	3	4	2	0	1	0	88	87	82	7.5	7.9	7.7	3.6	3.8	3.6	60.5	60.4	60.8	SX19AA	AMES BEST
CRESTLAND	8807	SX	109	133	147	19.6	19.7	19.3	0	13	0	7	7	1	1	0	0	80	80	82	7.2	7.7	7.5	3.7	3.8	3.7	60.8	60.8	61.0	8807	CRESTLAND
*DEKALB	DK656	SX	112	126	144	19.6	19.9	19.3	0	21	1	4	6	2	0	0	0	86	80	81	7.2	7.2	7.5	3.4	3.8	3.5	60.2	61.0	60.6	DK656	*DEKALB
JACQUES	7910	SX			149	19.6			0			5			1			86			7.2			3.4			60.0			7910	JACQUES
RENZE	6412	SX	108	139	142	19.6	19.9	18.8	0	15	0	5	7	2	1	0	0	86	87	86	7.4	7.9	7.5	3.7	3.7	3.6	60.5	60.3	60.9	6412	RENZE
COOP	2323	SX			152	19.7			0			4			0			88			7.1			3.7			60.4			2323	COOP
*GARST	TP4445	SXB		137	141	19.7	20.5		0	18		4	5		1	0		88	81		7.1	7.7		3.6	3.8		60.1	60.4		TP4445	*GARST
*LYNKS	4355	SX	110	128	143	19.7	20.0	19.6	0	28	0	4	6	2	0	1	0	89	85	86	7.1	7.7	7.6	3.5	3.7	3.4	60.2	60.6	60.6	4355	*LYNKS
MARK	MRK86113	SX	111	127	145	19.7	19.4	18.4	0	15	0	5	6	2	0	0	0	87	82	87	7.2	7.9	7.7	3.6	3.8	3.7	60.2	60.3	60.9	MRK86113	MARK
PIONEER	3162	SX			158	19.7			0			7			0			90			7.2			3.4			59.6			3162	PIONEER
SUPERIOR	SP6289	MSX		135	147	19.7	20.0		0	21		7	5		1	1		91	87		7.3	7.5		3.6	3.9		60.4	61.1		SP6289	SUPERIOR
*GOLDEN HARVEST	H2572	SX	111	144	146	19.8	19.9	18.8	0	20	0	3	5	1	0	0	0	89	87	83	7.4	7.9	7.7	3.7	3.7	3.7	60.5	60.2	60.8	H2572	*GOLDEN HARVEST
GRUHN HYBRID	SX8AA	SX			140	19.8			0			4			1			84			7.3			3.5			59.8			SX8AA	GRUHN HYBRID
GRUHN HYBRID	SX9AA	SX	100	127	140	19.8	19.7	18.7	0	24	0	6	16	3	0	1	0	84	91	76	7.2	7.4	7.6	3.5	3.7	3.4	60.4	61.1	60.6	SX9AA	GRUHN HYBRID
MARK	MRK90119	SX			138	19.8			0			7			1			84			7.3			3.6			60.6			MRK90119	MARK
NC+	6260	SX			145	19.8			0			5			1			90			7.3			3.5			60.3			6260	NC+
*NORTHRUP KING	PX9540	SX	111	148	149	19.8	19.9	19.2	0	22	0	3	5	1	0	0	0	86	89	85	7.4	7.7	7.8	3.6	3.8	3.4	60.1	60.4	60.1	PX9540	*NORTHRUP KING
*SUPERCROST	5415	SX		134	140	19.8	19.9		0	11		3	5		1	0		86	89		7.4	7.9		3.6	3.7		60.4	60.1		5415	*SUPERCROST
AGRIGENE	AG7450	SX			149	19.9			0			6			0			90			7.3			3.4			60.0			AG7450	AGRIGENE
ATLAS/S BRAND	SS1180	SX			155	19.9			0			4			0			89			7.2			3.7			60.3			SS1180	ATLAS/S BRAND
ATLAS/S BRAND	SS63B	SX	108	139	141	19.9	20.1	19.0	0	6	0	4	5	2	0	0	0	86	83	85	7.4	7.7	7.5	3.7	3.9	3.6	60.7	60.8	61.0	SS63B	ATLAS/S BRAND
FS	6992	SX	107	144	140	19.9	19.9	19.3	0	14	0	1	4	1	1	0	1	81	88	81	7.5	7.7	7.8	3.8	3.9	3.6	60.6	61.0	60.3	6992	FS
GOLDEN HARVEST	H2583	SX		131	148	19.9	20.1		0	11		4	5		0	1		92	82		7.4	7.9		3.6	3.9		60.1	60.5		H2583	GOLDEN HARVEST
GOLDEN HARVEST	H2648	SX		136	147	19.9	22.8		0	20		5	4		0	0		93	84		6.9	7.2		3.6	3.7		60.9	60.8		H2648	GOLDEN HARVEST
HOEGEMEYER	2680	SX		134	149	19.9	20.3		0	16		6	4		0	1		88	84		7.3	7.6		3.6	4.0		60.1	61.0		2680	HOEGEMEYER
HYPERFORMER	HS59	SX			140	19.9			0			2			0			83			7.4			3.7			60.7			HS59	HYPERFORMER
KRUGER	9018	SX			136	19.9			0			3			0			88			6.6			3.5			60.9			9018	KRUGER
SUPERIOR	SP6022	SX	109	134	150	19.9	19.9	19.5	0	20	0	3	8	1	1	1	0	92	89	85	7.2	7.6	7.4	3.7	3.9	3.8	60.5	60.7	61.4	SP6022	SUPERIOR
WILSON	2100	SX	114	135	140	19.9	20.5	19.5	0	21	0	3	9	3	1	0	0	90	89	86	7.5	7.7	7.4	3.6	3.8	3.7	60.2	60.4	61.1	2100	WILSON
CFS	EW06063	SX			135	20.0			0			3			0			81			7.7			3.7			59.2			EW06063	CFS
FONTANELLE	5230	SX	104	125	143	20.0	20.1	18.5	0	10	0	3	3	2	0	0	0	88	82	84	7.5	8.0	7.8	3.6	3.8	3.6	60.5	60.6	60.5	5230	FONTANELLE
HORIZON	717	SX			143	20.0			0			3			0			86			7.3			3.6			60.1			717	HORIZON
KRUGER	8112	SX		130	142	20.0	19.6		0	10		3	7		0	0		81	84		7.5	8.0		3.6	3.7		60.3	60.2		8112	KRUGER
KRUGER	8116	SX	110	142	142	20.0	19.9	19.4	0	13	0	6	5	2	0	0	0	86	88	82	7.6	7.9	7.6	3.6	3.7	3.7	60.2	60.2	61.1	8116	KRUGER
MCALLISTER	9118	SX			149	20.0			0			5			0			92			7.2			3.6			60.3			9118	MCALLISTER
NC+	5891	SX	106	134	144	20.0	19.9	19.4	0	7	0	3	4	2	0	0	1	88	82	81	7.6	7.8	7.8	3.3	3.8	3.6	59.1	60.6	60.7	5891	NC+
PFISTER	3340	SX	107	138	136	20.0	19.3	18.9	0	13	1	3	7	1	0	1	0	79	91	80	7.5	7.6	7.7	3.6	3.8	3.6	60.2	60.6	60.5	3340	PFISTER
*PIONEER	3181	SX		121	155	20.0	21.7		0	20		5	2		0	1		89	79		7.0	7.9		3.7	3.7		60.7	60.5		3181	*PIONEER
SUPERCROST	5460	SX	101	131	145	20.0	19.9	19.3	0	10	0	4	9	2	0	0	0	90	85	82	7.4	7.9	7.7	3.7	3.8	3.7	60.7	60.4	60.9	5460	SUPERCROST
CENEX/LAND O'LAKE	776	SX			147	20.1			0			4			0			89			7.2			3.6			60.5			776	CENEX/LAND O'LAKE
DYNA GROW	5561	SX			144	20.1			0			4			0			92			7.4			3.5			60.1			5561	DYNA GROW
FONTANELLE	6235	MSX	115	137	144	20.1	19.8	19.1	0	9	0	3	6	2	0	0	0	83	88	83	7.5	7.8	7.7	3.7	3.8	3.7	60.6	60.6	60.8	6235	FONTANELLE
FS	6933	SX	107	135	149	20.1	19.6	19.8	0	12	0	3	4	1	0	1	0	87	87	82	7.3	8.0	7.6	3.7	3.7	3.6	60.3	60.0	60.7	6933	FS
HORIZON	8115	SX			138	20.1			0			4			0			81			7.6			3.7			60.4			8115	HORIZON
SOI	9160	SX			145	20.1			0			3			0			89			7.4			3.7			60.4			9160	SOI
SUPERIOR	SP7290	SX			155	20.1			0			7			0			92			7.4			3.7			60.2

TABLE 2. AVERAGES OF 1989-90 AND 1988-90 OF VARIETIES TESTED IN DISTRICT 7 . LSD FOR YIELDS ARE 6 BUSHELS FOR 88-90 AND 7 BUSHELS FOR 89-90.

88-90 PROTEIN LSD = 0.2 . 88-90 OIL LSD = 0.1 . 88-90 STARCH LSD = 0.5 .
89-90 PROTEIN LSD = 0.2 . 89-90 OIL LSD = 0.2 . 89-90 STARCH LSD = 0.7 .

			YIELD BU/A		MOISTURE PCT		ROOT LDG PCT		STALK LDG PCT		DROP EAR PCT		STAND PCT		PROTEIN PCT		OIL PCT		STARCH PCT		VARIETY	BRAND
BRAND	VARIETY	CROSS	88-90	89-90	89-90	88-90	88-90	89-90	88-90	89-90	88-90	89-90	88-90	89-90	88-90	89-90	88-90	89-90	88-90	89-90		
GARST	8599	SX		121	15.6			1		5		0		84		8.0		3.6		60.2	8599	GARST
*PIONEER	3475	SX	110	124	16.8	16.4	3	5	4	6	0	0	80	83	7.7	7.6	3.6	3.6	60.5	60.5	3475	*PIONEER
PIONEER	3379	SX	136	146	16.9	17.3	2	3	2	3	0	0	86	88	7.3	7.3	3.4	3.4	60.4	60.2	3379	PIONEER
RENZE	6338	SX		140	17.0			4		6		0		88		7.2		3.6		60.5	6338	RENZE
PIONEER	3362	SX		146	17.2			1		4		1		87		7.1		3.5		60.5	3362	PIONEER
*DEKALB	T1100	SX	121	131	17.5	17.2	2	2	7	9	1	1	84	85	7.5	7.4	3.6	3.7	60.6	60.7	T1100	*DEKALB
CROWS	488	SX	125	136	17.6	16.9	5	7	5	6	0	1	83	84	7.2	7.1	3.7	3.7	60.8	60.8	488	CROWS
GOLDEN HARVEST	H2525	SX	124	140	17.6	17.2	3	4	4	5	1	1	84	88	7.3	7.1	3.5	3.6	60.5	60.5	H2525	GOLDEN HARVEST
TERRA	TR1110	SX	112	123	17.7	17.5	1	1	2	3	0	0	77	78	7.6	7.6	3.5	3.4	60.2	60.0	TR1110	TERRA
RENZE	6341	SX		144	17.7			3		4		0		91		7.5		3.7		60.5	6341	RENZE
MCALLISTER	9009	SX		134	17.9			2		6		1		85		7.2		3.7		60.7	9009	MCALLISTER
*PIONEER	3377	SX	126	139	18.3	17.4	5	7	6	9	0	1	80	80	7.1	6.9	3.6	3.6	60.7	60.8	3377	*PIONEER
TERRA	TR1125	SX	119	131	18.3	18.0	2	3	3	4	0	0	86	86	7.8	7.7	3.9	3.9	60.9	61.0	TR1125	TERRA
GOLDEN HARVEST	H2540	SX	123	133	18.4	18.1	3	5	4	6	0	0	88	87	7.9	7.8	3.7	3.8	60.4	60.4	H2540	GOLDEN HARVEST
COOP	2244	SX		131	18.5			3		3		0		84		7.5		3.8		60.9	2244	COOP
AMES BEST	SX16	SX	126	138	18.5	18.2	3	5	3	4	0	0	86	86	7.9	7.8	3.7	3.7	60.3	60.3	SX16	AMES BEST
DEKALB	DK612	SX		131	18.5			2		4		0		85		7.8		3.6		60.3	DK612	DEKALB
RENZE	6358	SX	125	137	18.5	18.1	2	4	5	6	0	0	86	86	7.5	7.4	3.7	3.7	60.7	60.7	6358	RENZE
GARST	8519	SX		135	18.6			4		3		0		88		7.8		3.9		60.9	8519	GARST
FS	6774	SX	120	131	18.7	18.3	2	3	4	4	0	0	87	88	7.8	7.6	3.8	3.8	60.8	60.7	6774	FS
FONTANELLE	4280	SX	123	132	18.7	18.4	1	2	5	7	0	0	89	91	7.7	7.5	3.9	4.0	60.9	60.9	4280	FONTANELLE
MCALLISTER	8611	SX	119	129	18.7	18.4	1	2	4	5	0	0	84	85	7.9	7.8	3.7	3.7	60.5	60.5	8611	MCALLISTER
*GARST	8532	SX	122	134	18.9	18.4	1	1	3	4	0	0	88	90	7.9	7.7	3.8	3.8	60.8	60.7	8532	*GARST
NORTHRUP KING	S7686	SX		137	19.0			8		4		0		90		7.7		3.7		60.6	S7686	NORTHRUP KING
CARGILL	8127	SX		142	19.3			7		4		0		92		7.9		3.5		59.9	8127	CARGILL
PIONEER	3180	SX		139	19.3			7		6		0		90		7.3		3.6		60.8	3180	PIONEER
AMES BEST	SX19AA	SX	126	138	19.4	19.4	6	10	3	4	0	0	85	87	7.7	7.7	3.7	3.7	60.6	60.4	SX19AA	AMES BEST
CROWS	682	SX	129	138	19.4	19.4	4	6	5	6	0	0	80	82	7.6	7.6	3.5	3.5	60.3	60.1	682	CROWS
CARGILL	7877	SX	133	148	19.4	18.9	7	10	4	3	0	0	86	85	7.5	7.3	3.8	3.8	60.8	60.8	7877	CARGILL
CROWS	697	SX		136	19.4			2		3		0		84		7.9		3.5		60.1	697	CROWS
*NORTHRUP KING	S7751	SX	133	144	19.5	19.3	4	7	4	5	0	0	86	87	7.6	7.6	3.7	3.7	60.7	60.7	S7751	*NORTHRUP KING
MARK	MRK86113	SX	127	136	19.5	19.2	5	7	4	5	0	0	85	84	7.6	7.5	3.7	3.7	60.5	60.2	MRK86113	MARK
ASGROW	RX788	SX	127	139	19.6	19.3	2	4	5	7	0	0	84	86	7.6	7.5	3.7	3.7	60.6	60.4	RX788	ASGROW
CRESTLAND	8817	SX	131	144	19.6	19.7	5	8	6	8	1	1	81	80	7.6	7.3	3.7	3.8	60.7	60.8	8817	CRESTLAND
MCCURDY	7400	SX	130	139	19.6	19.5	4	6	4	5	0	1	85	86	7.9	7.8	3.5	3.6	60.2	60.3	7400	MCCURDY
*CARGILL	7993	SX	129	137	19.6	19.5	6	9	3	4	0	0	87	86	7.5	7.6	3.7	3.7	60.5	60.3	7993	*CARGILL
CRESTLAND	8807	SX	130	140	19.6	19.5	4	7	5	7	0	0	81	80	7.5	7.4	3.7	3.7	60.9	60.8	8807	CRESTLAND
LYNKS	2810	SX		139	19.6			5		5		1		86		7.8		3.6		60.3	2810	LYNKS
PFISTER	3340	SX	127	137	19.6	19.4	5	7	4	5	0	0	83	85	7.6	7.5	3.7	3.7	60.4	60.4	3340	PFISTER
PIONEER	3189	SX		143	19.6			3		4		0		82		7.3		3.8		60.7	3189	PIONEER
*DEKALB	DK656	SX	127	135	19.7	19.6	7	11	4	5	0	0	82	83	7.3	7.2	3.6	3.6	60.6	60.6	DK656	*DEKALB
GRUHN HYBRID	SX9AA	SX	122	133	19.7	19.4	8	12	8	11	0	1	84	88	7.4	7.3	3.5	3.6	60.7	60.7	SX9AA	GRUHN HYBRID
RENZE	6412	SX	130	140	19.7	19.4	5	7	4	6	0	0	86	87	7.6	7.6	3.7	3.7	60.6	60.4	6412	RENZE
CFS	W7877	SX		135	19.8			8		5		1		86		7.5		3.4		59.5	W7877	CFS
MCALLISTER	8310	SX	129	137	19.8	19.4	4	6	3	5	0	0	87	86	7.6	7.6	3.7	3.8	60.7	60.7	8310	MCALLISTER
KRUGER	8112	SX		136	19.8			5		5		0		82		7.8		3.6		60.2	8112	KRUGER
FS	6933	SX	131	142	19.8	19.8	4	6	3	4	0	0	85	87	7.6	7.6	3.7	3.7	60.3	60.1	6933	FS
*GOLDEN HARVEST	H2572	SX	133	145	19.8	19.5	7	10	3	4	0	0	86	88	7.7	7.6	3.7	3.7	60.5	60.3	H2572	*GOLDEN HARVEST
*LYNKS	4355	SX	127	135	19.8	19.8	9	14	4	5	0	0	86	87	7.5	7.4	3.5	3.6	60.5	60.4	4355	*LYNKS
*NORTHRUP KING	PX9540	SX	136	148	19.8	19.6	7	11	3	4	0	0	87	88	7.6	7.5	3.6	3.7	60.2	60.2	PX9540	*NORTHRUP KING
*SUPERCROST	5415	SX		137	19.8			5		4		0		87		7.6		3.6		60.2	5415	*SUPERCROST
SUPERIOR	SP6289	MSX		141	19.8			10		6		1		89		7.4		3.7		60.7	SP6289	SUPERIOR
FS	6992	SX	130	142	19.9	19.7	5	7	2	3	1	0	84	85	7.7	7.6	3.8	3.8	60.6	60.8	6992	FS
SUPERIOR	SP6022	SX	131	142	19.9	19.8	7	10	4	5	0	1	89	90	7.4	7.4	3.8	3.8	60.9	60.6	SP6022	SUPERIOR
FONTANELLE	6235	MSX	132	140	19.9	19.7	3	4	4	4	0	0	85	86	7.7	7.6	3.7	3.7	60.7	60.6	6235	FONTANELLE
KRUGER	8116	SX	131	142	19.9	19.8	4	6	4	5	0	0	85	87	7.7	7.7	3.7	3.6	60.5	60.2	8116	KRUGER
NC+	5891	SX	128	139	19.9	19.8	2	3	3	3	0	0	83	85	7.7	7.7	3.6	3.5	60.1	59.8	5891	NC+
SUPERCROST	5460	SX	126	138	19.9	19.7	3	5	5	6	0	0	85	87	7.7	7.6	3.7	3.7	60.7	60.5	5460	SUPERCROST
ATLAS/S BRAND	SS63B	SX	129	140	20.0	19.7	2	3	4	5	0	0	84	84	7.5	7.5	3.7	3.8	60.8	60.7	SS63B	ATLAS/S BRAND
GOLDEN HARVEST	H2583	SX		140	20.0			6		5		0		87		7.6		3.7		60.3	H2583	GOLDEN HARVEST
*DEKALB	DK636	SX	129	139	20.0	19.7	5	7	3	5	0	0	84	85	7.7	7.6	3.6	3.6	60.3	60.2	DK636	*DEKALB
FONTANELLE	5230	SX	124	134	20.0	19.5	3	5	3	3	0	0	85	85	7.8	7.8	3.7	3.7	60.5	60.5	5230	FONTANELLE
*GARST	TP4445	SXB		139	20.1			9		4		0		85		7.4		3.7		60.2	TP4445	*GARST
HOEGEMEYER	2680	SX		141	20.1			8		5		1		86		7.4		3.8		60.5	2680	HOEGEMEYER
MCALLISTER	8408	SX	129	138	20.1	19.8	4	6	4	5	0	0	83	84	7.7	7.7	3.7	3.7	60.5	60.3	8408	MCALLISTER
HOEGEMEYER	2691	SX		139	20.2			11		5		0		87		7.9		3.6		59.7	2691	HOEGEMEYER
WILSON	2100	SX	130	138	20.2	20.0	7	11	5	6	1	1	88	89	7.5	7.6	3.7	3.7	60.6	60.3	2100	WILSON
TRI VALLEY	116	SX		139	20.3			7		5		0		86		7.6		3.7		60.4	116	TRI VALLEY
CARGILL	8027	SX		138	20.3			12		4		1		86		7.8		3.7		60.5	8027	CARGILL
*GARST	8344	SX	132	138	20.3	19.9	5	8	4	5	0	0	87	88	7.7	7.8	3.7	3.7	60.6	60.4	8344	*GARST
CFS	W7551	SX		139	20.4			7		5		1		87		7.8		3.6		60.0	W7551	CFS
OTTILIE	2490	SX	134	149	20.6	20.1	5	6	7	9	0	0	87	90	7.4	7.3	3.7	3.8	60.8	60.9	2490	OTTILIE
ASGROW	RX908	SX		138	20.8			8		4		0		88		7.7		3.5		60.2	RX908	ASGROW
*PIONEER	3181	SX		138	20.8			10		4		0		84		7.4		3.7		60.6	3181	*PIONEER
NC+	6414	SX	137	146	21.0	20.9	6	9	3	4	0	1	89	90	7.4	7.3	3.3	3.3	60.1	59.9	6414	NC+
MCCURDY	7477	SX		148	21.0			5		6		0		84		7.5		3.9		60.5	7477	MCCURDY
JACQUES	8210	SX	137	148	21.1	20.5	2	4	7	9	0	1	85	86	7.7	7.6	3.8	3.9	60.4	60.7	8210	JACQUES
MARK	MRK89118	SX	137	150	21.2	20.9	3	4	2	3	0	0	90	92	8.1	8.0	4.0	3.9	60.6	60.4	MRK89118	MARK
GOLDEN HARVEST	H2648	SX		141	21.3			10		5		0		88		7.0		3.6		60.8	H2648	GOLDEN HARVEST
AGRIGENE	AG7720	SX		151	21.4			9		6		0		86		7.6		3.8		60.6	AG7720	AGRIGENE
FS	8455	SX		145	21.4			8		4		0		90		8.0		3.8		60.1	8455	FS
DEKALB	DK711	SX	132	141	21.4	21.4	10	14	4	5	1	1	86	86	7.7	7.6	3.8	3.8	60.8	60.5	DK711	DEKALB
GRUHN HYBRID	SX119A	SX	118	129	22.0	21.8	8	10	8	9	0	0	80	83	7.9	7.8	4.0	3.9	60.9	60.7	SX119A	GRUHN HYBRID
WILSON	1890	SX		148	22.2			6		3		0		88		7.5		3.4		59.9	1890	WILSON
AVERAGE OF ALL ENTRIES			127.6	138.6	19.2	19.5	4.3	6.3	4.2	5.1	0.3	0.3	84.9	86.2	7.6	7.6	3.7	3.7	60.6	60.5	AVERAGE OF ALL ENTRIES	
AVERAGE OF WIDELY GROWN ENTRIES			127.0	137.5	18.9	19.4	5.2	7.7	4.2	5.1	0.2	0.4	84.8	85.7	7.6	7.5	3.6	3.7	60.5	60.5	AVERAGE OF WIDELY GROWN ENTRIES	

SX = SINGLE CROSS. MSX = MODIFIED SINGLE CROSS. 3X = 3-WAY CROSS. 4X = 4-WAY CROSS. SXB = BLEND OF SINGLE CROSSES
* = WIDELY GROWN VARIETY ENTERED BY IOWA STATE UNIVERSITY